

REMARKS

Claims 1-39 are pending in the present application. In view of the Declaration submitted herewith and the reasons that follow, Applicant respectfully requests reconsideration of the present application.

As a preliminary matter, Applicant thanks the Examiner for courtesies extended to Applicant's representative in the telephonic interview of June 16, 2004. During the interview, all claims and pending rejections were discussed. Although no agreement was reached regarding the rejections of record, the Examiner agreed to consider the attached Affidavit from the inventor of U.S. Patent No. 6,172,121 regarding the teachings of that reference.

I. Claim Rejections Under 35 U.S.C. § 102

The rejection of claims 1-9, 14-22, and 27-35 under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 6,172,121 ("the '121 patent") to Chaiko is respectfully traversed. Applicant's invention as defined, for example, by claim 1 distinguishes from the cited art by reciting a method for preparing organoclays that includes the step of adsorbing a sub-monomolecular layer of the polymeric hydrotrope on the clay. Claims 14 and 27 similarly recite adsorbing from about 0.1 to about 15 % by weight of the polymeric hydrotrope on the clay. Applicant respectfully submits that the '121 patent does not teach either of these steps.

It is asserted in the Final Office Action that the '121 patent

teaches that the organoclays contain 20-30 wt % or less of the organic component. Therefore, if the ratio of organic component to clay is so low, the surfaces of the clay will not be completely covered. There is also no indication in CHAIKO that such process would yield clay platelets having more than one layer of organic component.

Page 3, part 4(a).

Applicant respectfully submits that the mere statement of the organic content of the final product of the processes taught by the '121 patent cannot anticipate the step of "adsorbing a sub-

monomolecular layer of the polymeric hydrotrope on the clay,” or the step of “adsorbing from about 0.1 to about 15 percent by weight, relative to the weight of the clay, of the polymeric hydrotrope on the clay.”

The process for preparing organoclays disclosed in the ‘121 patent differs substantially from the claimed process. The ‘121 patent is directed to a process that “involves the treatment of impure, or run-of-mine, clay using an aqueous biphasic extraction system to produce a highly dispersed clay, free of mineral impurities and with modified surface properties brought about by adsorption of the water-soluble polymers used in generating the aqueous biphasic extraction system.” Abstract. As explained in the Declaration of David J. Chaiko, the inventor of the ‘121 patent, the processes taught in the ‘121 patent involve dispersing the clay in a polymer-rich phase of an aqueous biphasic extraction system. Declaration, ¶ 4. In this system, the clay is exposed to a large excess of polymer and, after flocculation and washing of the clay, it results in at least a complete monolayer coating of the polymer on each clay platelet surface. Declaration, ¶¶ 4-6. As stated by the inventor, “it is not possible for less than a complete monolayer of polymer to be present on the organoclay after the aqueous biphasic extraction. Use of less than an excess of polymer for the extraction process would not allow the formation of the aqueous biphasic and therefore would not allow the process to be carried out.” Declaration, ¶ 6.

By contrast, the present invention, as defined by claim 1, avoids the use of a large excess of polymer by directly adsorbing a sub-monomolecular layer of polymeric hydrotrope onto the surface of the clay. In the process disclosed in the ‘121 patent, the organoclay resulting from the aqueous biphasic extraction process may be treated with, for example, quaternary ammonium salts that will remove some or all of the polymer depending on the amount of ammonium salt used. Declaration, ¶ 7. However, this two step process for providing less than a complete monolayer of polymeric hydrotrope is not encompassed by the present claim. Alone, the disclosure in the ‘121 patent that the organoclay product of the two-step process has an organic content of 20 to 30 wt. % or less reveals little or nothing about the method which produced it. In the context of the biphasic extraction process, one of ordinary skill in the art would understand that the “or less” cannot teach an embodiment of the invention which does not exist, i.e., it can

teach or suggest the direct adsorption of less than a complete monolayer of polymer on the surface of the clay.

Likewise, the phrase “organic content of 20 to 30 wt. % or less” cannot anticipate the direct adsorption from about 0.1 to about 15 % by weight, relative to the weight of the clay, of the polymeric hydrotrope on the clay. The phrase “or less” does not teach the specific weight limits of this step of claims 14 and 27; still less does it teach the step of adsorbing between about 1 to about 10 wt. % polymeric hydrotrope on the clay as recited in claim 15. To argue otherwise is to rely improperly on a theory of inherency. As the MPEP states under section 2112, “the fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic” (emphasis in original). The MPEP further states that:

In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.

To establish inherency, the extrinsic evidence ‘must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.

MPEP § 2112 under the heading “Examiner Must Provide Rationale or Evidence Tending To Show Inherency” (emphasis in original).

In view of the comparatively large amount of polymer adsorbed to the surface of the clay during the biphasic extraction process as described above, the Examiner is respectfully requested to withdraw the rejection or expressly state the basis for the assumption that “20-30 weight % or less organic content” of the organoclay encompasses the recited methods.

As described above, the ‘121 patent fails to teach each and every element of the claimed methods. Accordingly, reconsideration and withdrawal of this rejection under 35 U.S.C. § 102(b) is respectfully requested.

II. Claim Rejections Under 35 U.S.C. § 103(a).

The rejection of claims 10-13, 23-26, and 36-39 under 35 U.S.C. § 103(a) as allegedly being obvious over the '121 patent in view of Ferraro (U.S. Patent No. 5,837,763) is respectfully traversed.

Applicant respectfully submits that the Examiner has not established a prima facie case of obviousness. As noted above, reliance on the '121 patent is misplaced. The '121 patent does not teach the step of adsorbing a sub-monomolecular layer of the polymer hydrotrope on the clay (claim 1) or the step of adsorbing from about 0.1 to about 15 % by weight, relative to the weight of the clay, of the polymeric hydrotrope on the clay (claims 14 and 27). Ferraro fails to cure these deficiencies. Ferraro teaches wax compositions containing an intercalate which lacks the claimed cationic surfactant (i.e., lacks onium cations). See, for example, col. 6, lines 1-5 and lines 57-60. Accordingly, the combination of cited references fails to teach or suggest every element of the claims.

Furthermore, Ferraro teaches away from combining or modifying the cited references. Ferraro expressly teaches that the disclosed intercalates are to be formed "without the need for coupling agents or spacing agents such as the onium ion or silane coupling agents." Col. 6, lines 305; see also col. 6, lines 57-60 and claims 1, 26, 32 and 46. The Examiner's assertion that "the two prior art disclosures are in the same field of endeavor" does not alter the fact that Ferraro expressly disavows the use of the cationic surfactants required by the present invention. The Examiner has failed to set forth any reason why or how one of ordinary skill in the art would reconcile the conflicting teachings of Ferraro and the '121 patent to come up with the present invention. Accordingly, it is respectfully submitted that one of ordinary skill in the art would lack motivation to combine or modify the disclosure of the cited references.

For the reasons stated above, Applicant respectfully submits that a prima facie case of obviousness has not been established. Accordingly, reconsideration and withdrawal of the rejection of claims 10-13, 23-26, and 36-39 under 35 U.S.C. § 103(a) are respectfully requested.

III. Conclusion

In view of the above remarks, reconsideration and favorable action on all claims are respectfully requested. If any issues remain to be resolved in view of this response, the Examiner is invited to contact the undersigned at the telephone number set forth below so that a prompt disposition of this application can be achieved.

Respectfully submitted,

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